

Claims 1, 3, 5-7 and 9-12 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,057,360 ("Osaka"). In addition, Claims 1-10 and 13 are rejected under 35 U.S.C. §103(a) over JP 8151270 ("Kazuo-270"). Claims 1-10 are also rejected under 35 U.S.C. §103(a) over JP 8151271 ("Kazuo-271").

Osaka discloses a green sheet and a ceramic sheet produced by calcining the green sheet. Osaka discloses that green sheets include flaws such as fractures and cracks (Osaka at column 1, lines 25-27; Table 1, Control 1; Column 15, line 41). Osaka discloses that calcined ceramic sheets include *warp* (Osaka at column 13, line 68; Table 2).

Kazuo-270 discloses a porous sheet is placed on a green sheet and fired to give a ceramic sheet having less than 0.1% *warpage*. Under loading tests cracking can occur. See Kazuo-270 at English-language Abstract.

Kazuo-271 discloses placing a green sheet on or between porous sheets and firing the green sheet to form a ceramic sheet having less than 0.1% *warpage*. See Kazuo-271 at English-language Abstract.

However, the cited prior art is silent about the independent Claim 1 "defect" that is "selected from the group consisting of foreign matter present on a surface of the sheet or inside the sheet, a flaw formed by a depression on the surface of the sheet, and a stain adhering to the surface of the sheet". (Note that, while the prior art "warpage" is a macro-defect characterizing the twisting and deforming of a ceramic sheet in its entirety, the recited "depression on the surface of the sheet" is a micro-defect characterizing only a localized portion of the surface of the ceramic sheet and not the entire ceramic sheet.) Thus, the cited prior art fails to have rendered obvious the claimed invention.

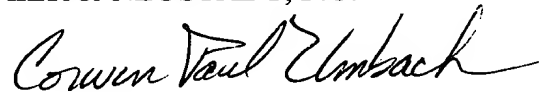
Claims 1-13 are rejected under 35 U.S.C. §112, second paragraph. To obviate the rejection, Claims 1-8 and 11-13 are amended.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No. 24,618

Corwin P. Umbach, Ph.D.
Registration No. 40,211

Attachments:

Marked-up copy of amendments



22850

(703) 413-3000
Fax #: (703) 413-2220
NFO/CPU

I:\atty\Cpu\Dec02\28390072-rceamd.WPD

Marked-Up Copy
Serial No: 09/445,423
Amendment Filed Herewith

IN THE CLAIMS

Please amend Claims 1-8 and 11-13 as follows:

1. (Two Times Amended) A ceramic sheet having not more than 5 defects in an area having a length of 30 mm [or less], [the] each defect being detected based on an image obtained with a charge coupled device (CCD) camera and being selected from the group consisting of foreign matter present on a surface of the sheet or inside the sheet, a flaw formed by a depression on the surface of the sheet, and a stain adhering to the surface of the sheet, wherein

the ceramic sheet is produced by a process comprising steps of:

sandwiching a green sheet [to be baked] between spacers; and

baking the green sheet [to be baked] while the green sheet [to be baked] is sandwiched between the spacers, where

each of the spacers is either a green sheet or a calcined sheet each including spherical ceramic particles having an average particle diameter of 0.1 to less than 5 μm as a main component.

2. (Amended) [A] The ceramic sheet according to claim 1, wherein the ceramic sheet is used for solid electrolyte, and has an area of 100cm² or larger and a thickness of 0.3mm or smaller.

3. (Amended) [A] The ceramic sheet according to claim 2, wherein the solid electrolyte includes zirconia having yttria.

4. (Two Times Amended) [A] The ceramic sheet according to any one of claims 1 to 3, wherein the defect is [a] the flaw or the foreign matter [having] and has an area of 0.1 mm² or larger.

5. (Two Times Amended) A method for producing a ceramic sheet, the method comprising steps of:

sandwiching a green sheet [to be baked] between spacers; [and]

baking the green sheet [to be baked] while the green sheet [to be baked] is sandwiched between the spacers; and

producing the ceramic sheet of claim 1, where

each of the spacers is a either a green sheet or a calcined sheet each comprising spherical ceramic particles having an average particle diameter of 0.1 to less than 5 μm as a main component.

6. (Two Times Amended) [A] The method [for producing a ceramic sheet] according to claim 5, wherein the content of the spherical ceramic particles is 80 wt% or larger with respect to the weight of the total ceramics contained in each of the spacers.

7. (Two Times Amended) [A] The method [for producing a ceramic sheet] according to claims 5 or 6, wherein each of the spacers has a sintering temperature of 50 to 300°C higher than the sintering temperature of the green sheet to be baked.

8. (Two Times Amended) [A] The method [for producing a ceramic sheet] according to claims 5 or 6, wherein

at least one of the spacers is a green sheet, and

the baking calcines the at least one of the spacers [into a] to form at least one porous sheet having a porosity of 5 to 60%.

11. (Amended) [A] The green sheet [for use as a spacer in producing the ceramic sheet of] according to claim 9, wherein the spherical ceramic particles have a ratio of a major axis thereof relative to a minor axis thereof of 1 to 3.

12. (Amended) [A] The calcined sheet [for use as a spacer in producing the ceramic sheet of] according to claim 10, wherein the spherical ceramic particles have a ratio of a major axis thereof relative to a minor axis thereof of 1 to 3.

13. (Amended) A spacer [according to] for use in producing the ceramic sheet of claim 1, wherein the content of the spherical ceramic particles is 80 wt% or larger with respect to the weight of the total ceramics contained in the spacer.